

Overview



	A	B	C	D
1	Quantity		10	
2	Price		25	
3	Total		250	
4				
5	Sales Tax	16%	40	
6				
7	Total Incl. Tax		290	
8				

101

User-defined Spreadsheet



Step 1: Analyze user defined Spreadsheet  
Logic and store in Application-Metafile

102



Application Metafile

103



Step 2: Produce Source Code Modules  
from Application Metafile

104

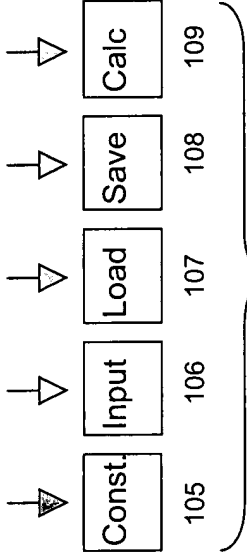


Fig. 1a

# Overview (contd.)

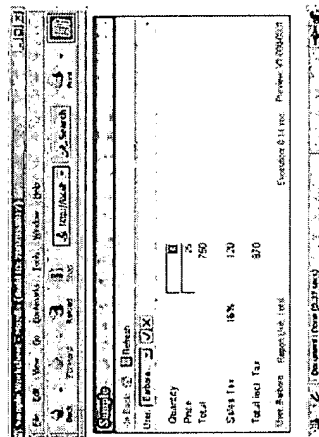
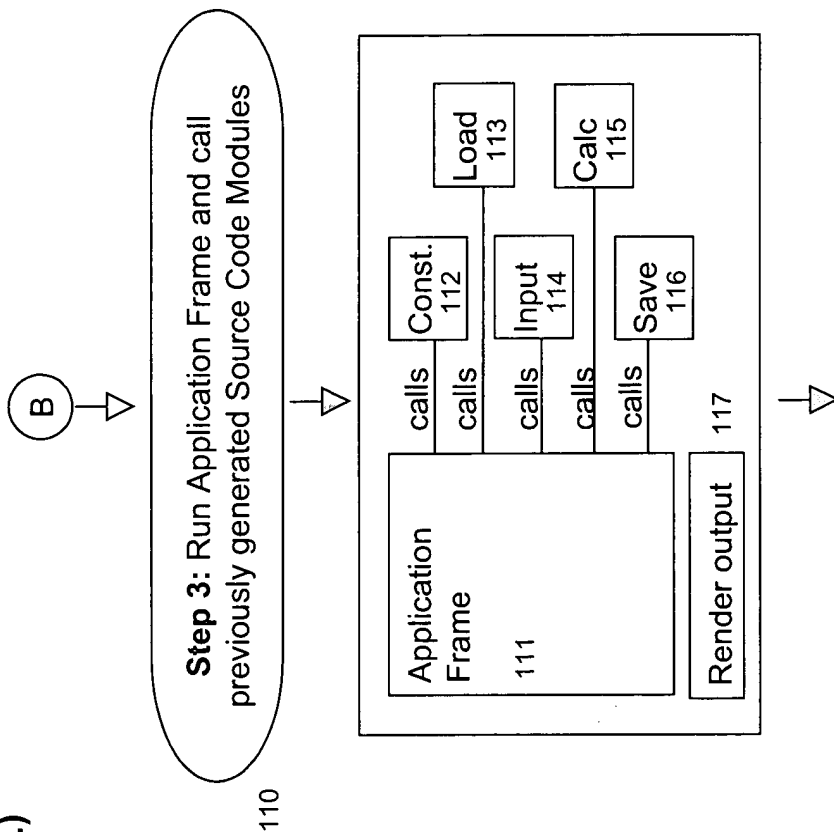


Fig. 1b



Sample Spreadsheet

	A	B	C	D
1	Quantity		10	
2	Price		25	
3	Total		250	
4				
5	Sales Tax	16%	40	
6				
7	Total incl. Tax		290	
8				

200

Fig. 2

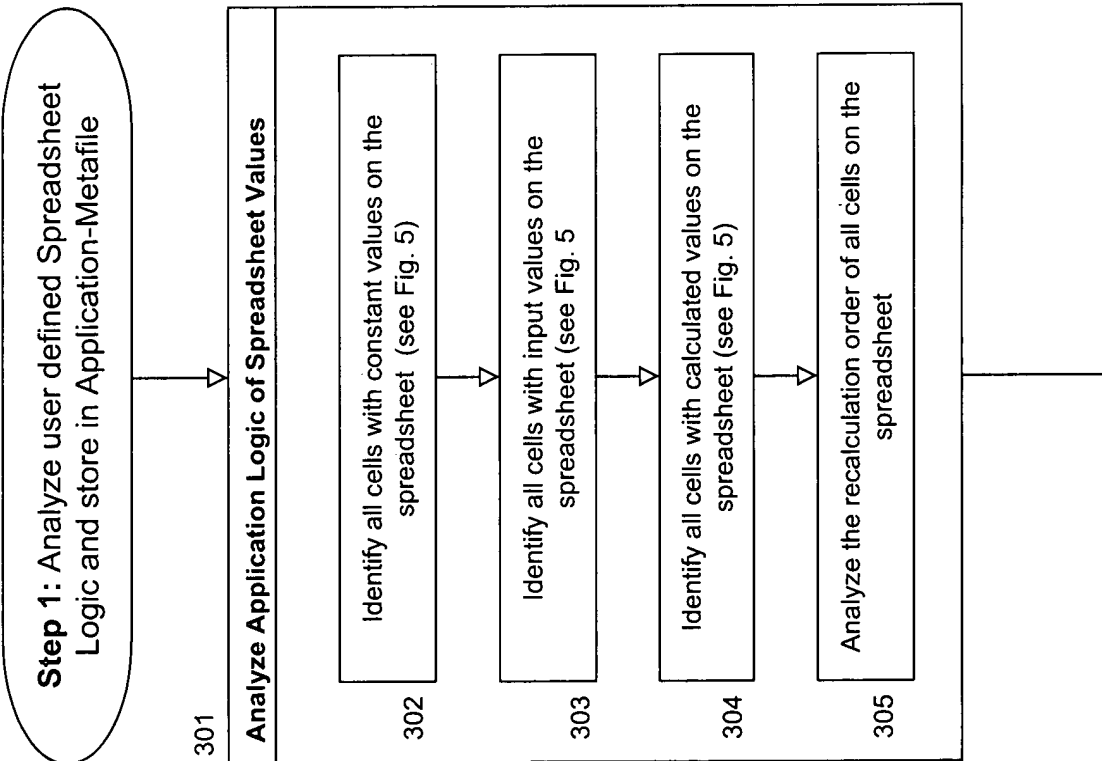


Fig. 3

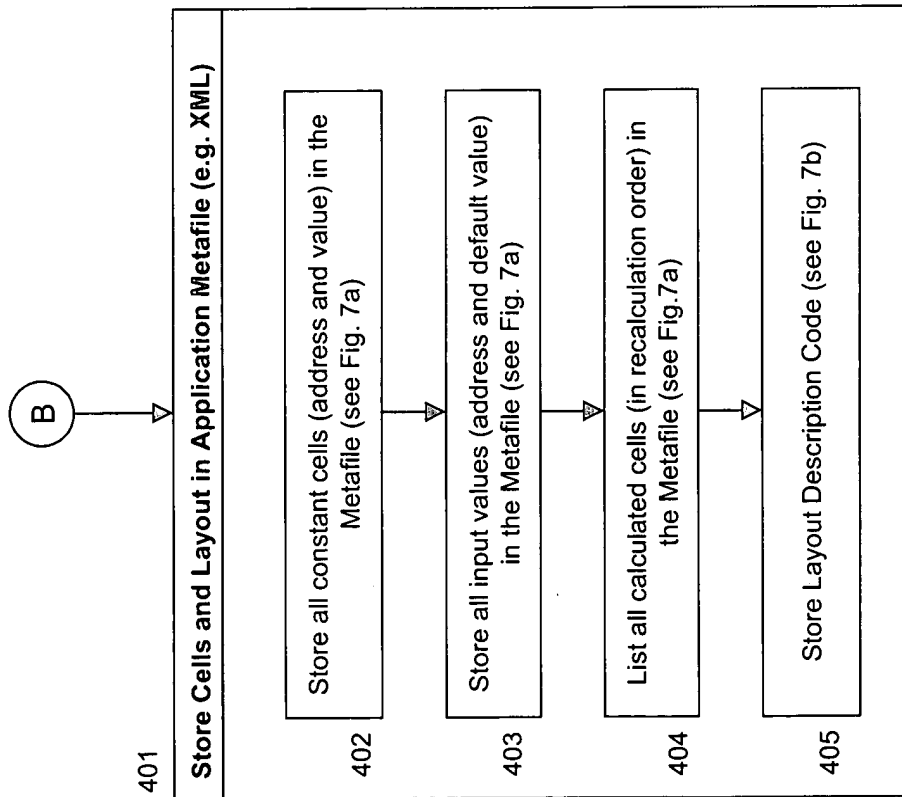


Fig. 4



## Cell Types on the Sample Spreadsheet

Cells with input values

503

	A	B	C	D
1	Quantity		10	
2	Price		25	
3	Total		250	
4				
5	Sales Tax	16%	40	
6				
7	Total incl. Tax		290	
8				

501

Cells with formulas:

$C3 = C2 * C1$

$C5 = C3 * B5$

$C7 = C5 + C3$

504

Cells with constant values

502

Fig. 5



## Layout Description Code for Sample Spreadsheet (HTML)

```
1 <table>
2 <col width=115>
3 <col width=40>
4 <col width=80>
5 <tr>
6 <td id='A1'></td>
7 <td></td>
8 <td id='C1'></td>
9 </tr>
10 <tr>
11 <td id='A2'></td>
12 <td></td>
13 <td id='C2'></td>
14 </tr>
15 <tr>
16 <td id='A3'></td>
17 <td></td>
18 <td id='C3'></td>
19 </tr>
20
21 ...
22
23 <tr>
24 <td id='A7'></td>
25 <td></td>
26 <td id='C7'></td>
27 </tr>
28 </table>
```

Fig. 6



# Application Metafile

with Spreadsheet Logic and Layout for Sample Spreadsheet (XML)

```
<?xml version="1.0" encoding="ISO-8859-1" ?>
- <Workbook Name="simple">
701 - <ConstCells>
    <ConstCell Name="A1">Quantity</ConstCell>
    <ConstCell Name="A2">Price</ConstCell>
    <ConstCell Name="A3">Total</ConstCell>
    <ConstCell Name="A5">Sales Tax</ConstCell>
    <ConstCell Name="B5">0.16</ConstCell>
    <ConstCell Name="A7">Total incl. Tax</ConstCell>
  </ConstCells>
702 - <InputCells>
    <InputCell Name="C1">10</InputCell>
    <InputCell Name="C2">25</InputCell>
  </InputCells>
703 - <CalcCells>
    - <CalcCell Name="C3">
      <![CDATA[ $C2*$C1 ]]>
    </CalcCell>
    - <CalcCell Name="C5">
      <![CDATA[ $C3*$B5 ]]>
    </CalcCell>
    - <CalcCell Name="C7">
      <![CDATA[ $C5+$C3 ]]>
    </CalcCell>
  </CalcCells>
+ <Worksheets>
</Workbook>
```

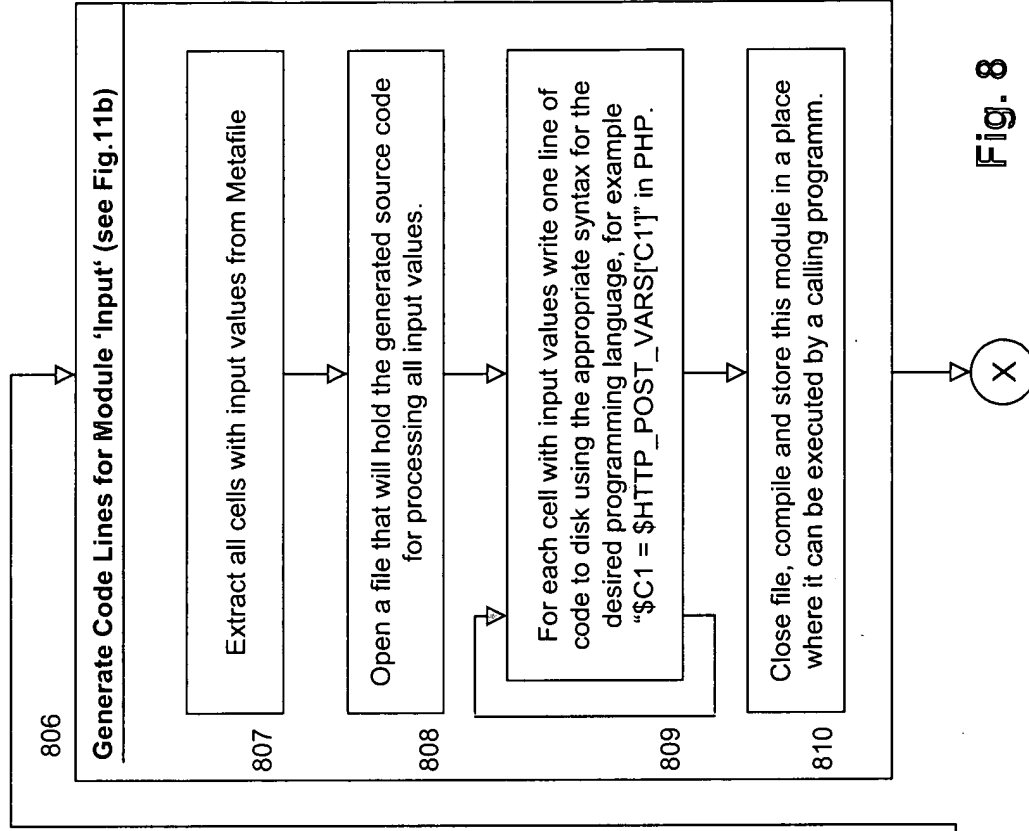
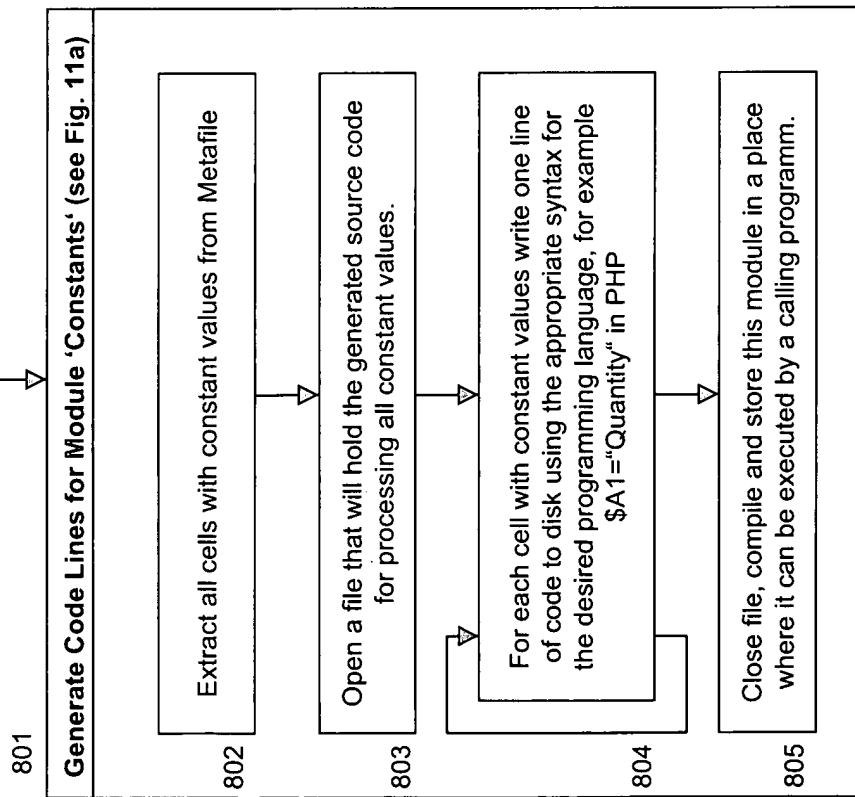
Fig. 7a

```
- <Worksheets>
- <Worksheet Name="Tabelle1">
704 - <SheetHTML>
    - <![CDATA[
      <table>
        <col width=115>
        <col width=40>
        <col width=80>
        <tr>
          <td id='A1'></td>
          <td></td>
          <td id='C1'></td>
        </tr>
        ...
        <tr>
          <td id='A7'></td>
          <td></td>
          <td id='C7'></td>
        </tr>
      </table>
    ]]>
  </SheetHTML>
</Worksheet>
</Worksheets>
```

Fig. 7b



**Step 2: Produce Source Code Modules from  
Application Metafile**



**Fig. 8**



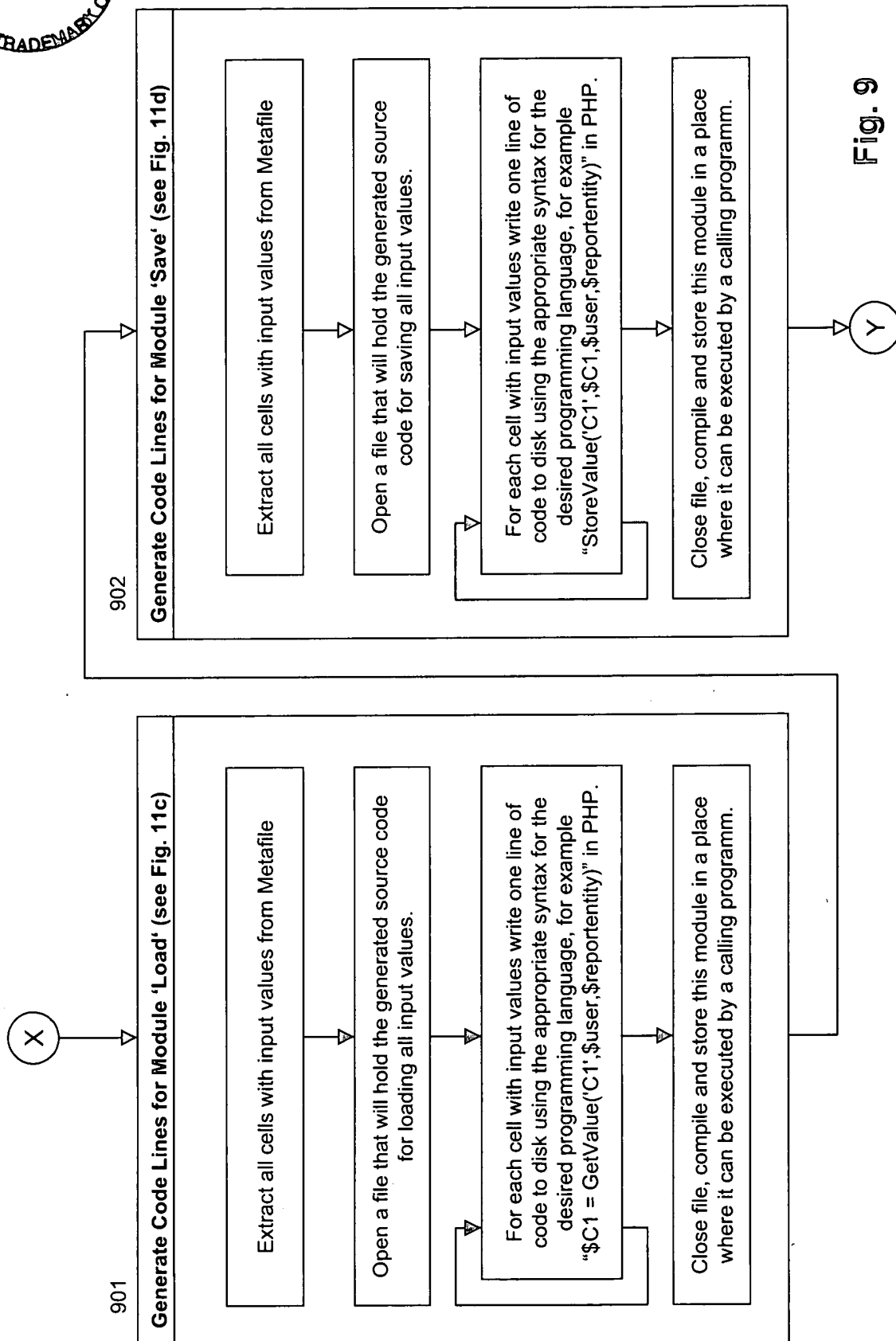


Fig. 9

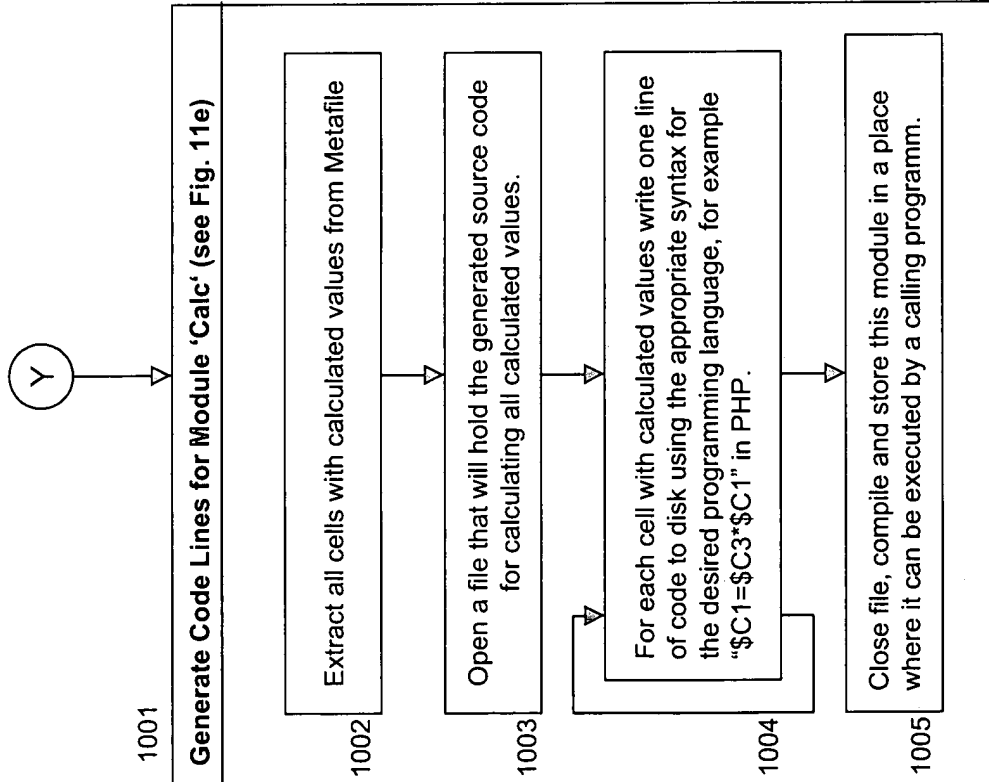


Fig. 10



## Example for generated Code Modules while processing the Application Metafile from the Sample Spreadsheet

**Fig. 11a**

Generated Code in Module 'Constants' for the Sample Spreadsheet (HTML)

```
1 $A1 = 'Quantity';
2 $A2 = 'Price';
3 $A3 = 'Total';
4 $A5 = 'Sales Tax';
5 $B5 = 0.16;
6 $A7 = 'Total incl. Tax';
```

**Fig. 11b**

Generated Code in Module 'Input' for the Sample Spreadsheet (HTML)

```
1 $C1 = $HTTP_POST_VARS['C1'];
2 $C2 = $HTTP_POST_VARS['C2'];
```

**Fig. 11c**

Generated Code in Module 'Load' for the Sample Spreadsheet (HTML)

```
1 $C1 = GetValue('C1',$user,$reportentity);
2 $C2 = GetValue('C2',$user,$reportentity);
```

**Fig. 11d**

Generated Code in Module 'Save' for the Sample Spreadsheet (HTML)

```
1 StoreValue('C1',$C1,$user,$reportentity);
2 StoreValue('C2',$C2,$user,$reportentity);
```

**Fig. 11e**

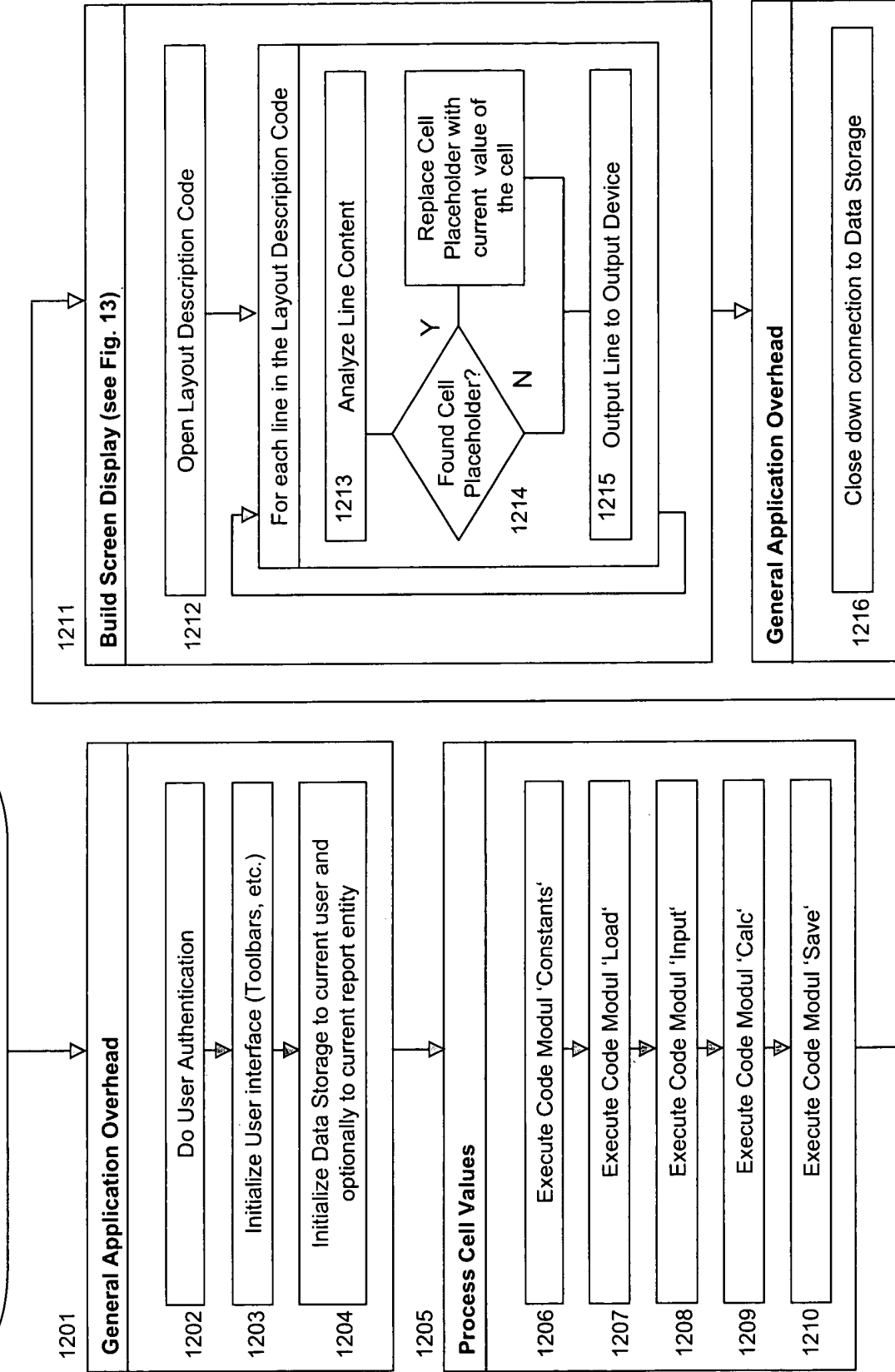
Generated Code in Module 'Calc' for the Sample Spreadsheet (HTML)

```
1 $C3 = $C2*$C1;
2 $C5 = $C3*$B5;
```



**Step 3: Run Application Frame and call  
previously generated Source Code Modules**

**Fig. 12**



Resulting Application (Running in an Internet Browser)

Sample Worksheet - Mozilla {Build ID: 2002053012}

File Edit View Go Bookmarks Tools Window Help

Back Forward Reload Stop

http://local

Search

Print

Sample

Back Refresh

User: Barbara... ☒ ☒

Quantity		
Price	25	
Total	750	
Sales Tax	16%	120
Total incl. Tax		870

User: Barbara Report Unit: Total Execution: 0.14 sec. Preview: V1-000-0001

Document: Done (0:37 secs)

Fig. 13